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APPLICATION NO).	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
10/675,350		09/30/2003	Hong Po	NU-206WO-1	NU-206WO-1 5783	
38731	7590	04/25/2006		EXAM	EXAMINER	
NUFERN 7 AIRPOR		POAD.	KANG, JU	KANG, JULIANA K		
EAST GR			ART UNIT	PAPER NUMBER		
,				2874	<u>.</u>	
				DATE MAILED: 04/25/2006		

Please find below and/or attached an Office communication concerning this application or proceeding.

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-, - , -		Application No.	Applicant(s)	t			
		10/675,350	PO, HONG				
	Office Action Summary	Examiner	Art Unit				
		Juliana K. Kang	2874				
Period f	 The MAILING DATE of this communication apportunities Reply 	pears on the cover sheet with th	e correspondence addres	:s			
WHIII - Extending after	IORTENED STATUTORY PERIOD FOR REPL' CHEVER IS LONGER, FROM THE MAILING Dansions of time may be available under the provisions of 37 CFR 1.1 r SIX (6) MONTHS from the mailing date of this communication. O period for reply is specified above, the maximum statutory period or ure to reply within the set or extended period for reply will, by statute reply received by the Office later than three months after the mailing and patent term adjustment. See 37 CFR 1.704(b).	ATE OF THIS COMMUNICAT 36(a). In no event, however, may a reply b will apply and will expire SIX (6) MONTHS f , cause the application to become ABANDO	ON. e timely filed rom the mailing date of this commu DNED (35 U.S.C. § 133).				
Status							
1)🛛	Responsive to communication(s) filed on 13 Fe	ebruary 2006.					
2a) <u></u>		action is non-final.					
3)[Since this application is in condition for allowance except for formal matters, prosecution as to the merits is						
	closed in accordance with the practice under E	Ex parte Quayle, 1935 C.D. 11,	, 453 O.G. 213.				
Disposit	ion of Claims						
4)⊠	Claim(s) 1-47 is/are pending in the application						
,	4a) Of the above claim(s) is/are withdrawn from consideration.						
5)⊠	Claim(s) 47 is/are allowed.						
6)⊠	Claim(s) 1-42 is/are rejected.						
7)🖾	Claim(s) 43-46 is/are objected to.		•				
8)[Claim(s) are subject to restriction and/o	r election requirement.					
Applicat	ion Papers		·				
9)[The specification is objected to by the Examine	er.					
10)[The drawing(s) filed on is/are: a) acc	epted or b) objected to by the	ne Examiner.				
	Applicant may not request that any objection to the	drawing(s) be held in abeyance.	See 37 CFR 1.85(a).				
	Replacement drawing sheet(s) including the correct	tion is required if the drawing(s) is	objected to. See 37 CFR 1.	.121(d).			
11)[The oath or declaration is objected to by the Ex	caminer. Note the attached Off	ice Action or form PTO-1	52 .			
Priority	under 35 U.S.C. § 119						
	Acknowledgment is made of a claim for foreign All b) Some * c) None of:	priority under 35 U.S.C. § 119	9(a)-(d) or (f).				
	1. Certified copies of the priority document	s have been received.					
	2. Certified copies of the priority document	s have been received in Applic	ation No				
	3. Copies of the certified copies of the prior	•	eived in this National Stag	ge			
	application from the International Bureau	, , , ,					
- ;	See the attached detailed Office action for a list	of the certified copies not rece	ived.				
Attachmei	nt(s)						
	ce of References Cited (PTO-892)	4) Interview Summ					
2) ∐ Noti 3) ⊠ Infoi	ce of Draftsperson's Patent Drawing Review (PTO-948) mation Disclosure Statement(s) (PTO-1449 or PTO/SB/08)	Paper No(s)/Mai	l Date al Patent Application (PTO-152)			
	er No(s)/Mail Date <u>9/30/03, 4/8/05</u> .	6) Other:	.,	•			

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DETAILED ACTION

1. Applicant's communication filed on February 13, 2006 has been carefully review by the Examiner. Applicant's argument is persuasive and the Restriction requirement is hereby withdrawn.

Claim Rejections - 35 USC § 112

- The following is a quotation of the second paragraph of 35 U.S.C. 112:
 The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
- 3. Claims 34 and 38-46 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 34 recites the limitation "the at least one additional fiber" In line 1. There is insufficient antecedent basis for this limitation in the claim. It appears that claim 34 should be dependent on claim 33. For the examining purpose, claim 34 will be examined as it is dependent on claim 33.

Claims 38 and 42 recite the limitation "said inner region" in line 4 (claim 38) and line 5 (claim 42). There is insufficient antecedent basis for this limitation in the claim. For the examining purpose, "said inner region" will be interpreted, as a first region that is recited in claim 38 in line 2 because it appears that there is not other region between the first region and the multimode core. Appropriate correction is required.

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Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- 5. Claims 1-6, 8, 10, 14, 15-25, 27 and 37-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Krivoshlykov (U.S. Patent 6,018,533, submitted by applicant).

Regarding claims 1-6, Krivoshlykov discloses a multimode optical fiber comprising: a first region (center region indicated as 1 in Fig. 1a); a multi-core ring-shaped core surrounding the first region (indicated as 2 in Fig. 1a), the core comprising a silica material and a rare earth metal ions (see column 1 liens 33-38, see claims 1, 4, 6 and 10 of Krivoshlykov); and a first cladding (the region indicated as nc1 in Fig. 1a) surrounding the core.

Regarding claims 8 and 10, Krivoshlykov shows claimed index profile in Fig. 1a.

Regarding claims 15-17, 19-25, 27 and 37, Krivoshlykov further discloses coupling the multimode to a single mode optical fiber (see abstract and column 4 lines 40-41).

Regarding claim 18, Krivoshlykov discloses an energy source (see claim 1 of Krivoshlykov).

Regarding claims 38-41, Krivoshlykov discloses that the pump light form semiconductor sources usually couples into a highly multimode doped cladding region that guides the pump radiation (see column 1 lines 50-52). Kirvoshlykov further

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discloses applying the multimode optical fiber using standard methods for pumping the multimode optical fiber (see column 6 lines 25-35). Since Krivoshlykov discloses the core that is doped with active material it inherently is capable of focusing energy at locations spaced along the length of the fiber.

Regarding claim 42, as described above Krivoshlykov discloses the claimed invention including

Claim Rejections - 35 USC § 103

- 6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 7. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krivoshlykov.

Regarding claims 31 and 32, as described above Krivoshlykov disclose the active core that is pumped by an external power source (see claim 1 of Krivoshlykov) however Krivoshlykov does not explicitly teach whether the pumping configuration is a side or end pump configuration. A side pump configuration and an end pump configuration are well known in the art. Thus applying any well known pump configuration in Krivoshlykov would have been obvious to one having ordinary skill in the art at the time the invention was made to pump the active core.

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8. Claims 7, 9, 11-14, 26, 28-30 and 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krivoshlykov and further in view of Fermann et al (U.S. Patent 6,954,575 B2).

Regarding claims 11-14 and 28-30, as described above Krivoshlykov disclose the claimed invention except a second cladding layer. Fermann et al teach a fiber laser having a polymer coating layer with a lower refractive index than the cladding layer (see column 10 lines 18-21). Providing an extra outer layer protects the fiber. Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply additional coating layer in Krivoshlykov as taught by Fermann et al to protect the optical fiber.

Regarding claims 33-34, Krivoshlykov teaches connecting a multimode optical fiber to standard single-mode optical fiber networks (see abstract). Thus coupling additional single mode to the multimode optical fiber would have been obvious to one having ordinary skill in the art to transmit signals to optical fiber networks.

Regarding claims 7, 9 and 26, Krivoshlykov teaches the claimed invention except for the first region comprising a silica 20 material and the first cladding comprising a silica material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use silica 20 material for the first region and silica material for the first cladding, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use a s a matter of obvious design choice,

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Allowable Subject Matter

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9. Claim 47 is allowed.

The following is a statement of reasons for the indication of allowable subject matter: there is no prior art made of record that teaches or reasonably suggests the claimed optical apparatus comprising a second optical fiber having a core wherein the core is connected to only a part of the cross section of the core of the first optical fiber as set forth in claim 47 along with other claimed features.

Claims 43-46 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

There is no prior art made of record that teaches or reasonably suggests the claimed optical apparatus comprising a second optical fiber having a core wherein the core is connected to only a part of the cross section of the core of the first optical fiber as set forth in claim 42 along with other claimed features.

Conclusion

10. The prior art documents submitted by applicant have been considered and made of record (note the attached copy of form PTO-1449).

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11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Diening et al (U.S. Patent 6,650,663 B1) teach a diode pumped fiber laser having the claimed index profile (see Fig. 3b).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juliana K. Kang whose telephone number is (571) 272-2348.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JULIANA KANG
PRIMARY EXAMINER

4/20/06

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